Quartz PLL **DIRECT DRIVE**

FULL AUTOMATIC TURNTABLE

PL-630

ST
S/G
HGT

OPERATING INSTRUCTIONS

Thank you for buying this Pioneer stereo turntable. Please read through these operating instructions and then you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for furture reference.

These operating instructions are based on the model HGT, and they can be used for the HGT, ST and S/G models. The differences between the models are given below.

Power Requirements

PL-630/HGT: 220-240V ∿, 50Hz
PL-630/ST, S/G: AC 110-120/220-240V ∿ (switchable), 50, 60Hz

NOTE:
Read through the section on the "LINE VOLTAGE SELECTOR SWITCH" before using your turntable and check that the voltage selector switch is set correctly for use in your area.

Power Cord

PL-630/HGT:

This is configured as an AC inlet type. Use a separate power cord in order to connect the power supply.

PL-630/ST, S/G:

The power cord is mounted at the rear.

Accessories

PL-630/HGT, ST:

A cartridge is not provided with these models. However, screws for mounting the cartridge, as well as washers and nuts come with each model, and so before use, provide yourself with the cartridge you intend to use, read through the section "ATTACHING THE CARTRIDGE" and then attach the cartridge to the accessory headshell.

PL-630 S/G:

This model comes with the PC-600 cartridge (which is attached to the accessory headshell). Screws for mounting a cartridge as well as washers and nuts are not provided.

PIONEER

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FEATURES

Electronic Full Auto Mechanism and Release Switch

The model's full auto mechanism is based on optical, and therefore no-contact, detection principles so that force is not needlessly exerted on the tonearm. When the switch is depressed, the tonearm automatically swings over to the record and play begins. All the controls are arranged at the front so that records can be played and the controls operated with the dust cover down. This effectively increases the handling ease of the turntable. Furthermore, the auto mechanism can be released with the flick of a switch, and this allows you to play non-standard size records where the auto-return function would otherwise stop play before the end of the record.

Quick Repeat Function for Repeat Play

The quick play function is designed to automatically return the tonearm to the first track on a record for repeat play after all the tracks have been played. This handy function means that you can listen to the same tracks any number of times without even lifting a finger.

Quartz PLL Brushless DC Hall Motor

The model adopts a quartz PLL system which compares the waveforms of the high-precision reference oscillator employing a quartz crystal with the output waveforms of the frequency generator built into the rotor of the motor, and thereby controls the rotational speed of the motor. This system features superb time and temperature drift as well as load resistance characteristics, so the motor guarantees speed accuracy at all times.

Precision-engineered Parts for an Excellent Speed Performance

The precision-finished center shaft and bearings (with a circularity of less than 0.2μ) and the platter with its high inertial mass of 340kg-cm^2 prove to be a winning combination in this model. Together with the quartz PLL brushless Hall motor, they yield such top-notch characteristics as a wow and flutter of less than 0.025% (WRMS) and a signal-to-noise ratio of better than 75dB (DIN-B). This is a truly professional performance.

All-electronic Durable Quick Stop Function

The model incorporates an all-electronic brake to bring the platter to a halt instantly. When the tonearm swings back to the arm rest, a current flowing in the opposite direction to that determining the platter's rotation passes to the motor drive coil and, in an instant, the platter is stopped rotating. This function is convenient for changing over records speedily.

No-howl, Vibration-resistant Coaxial Suspension System

The platter and the tonearm are secured to the base board, and the base board is spring-mounted and separated from the cabinet with what Pioneer calls the coaxial suspension construction. This cuts out virtually all of the vibrations transmitted from the floor, and greatly reduces the chances of howl.

BEFORE USE

REMOVE THE TRANSIT SCREWS

As shown in the figure, use a Phillips screwdriver to remove the three screws used when transporting the turntable.

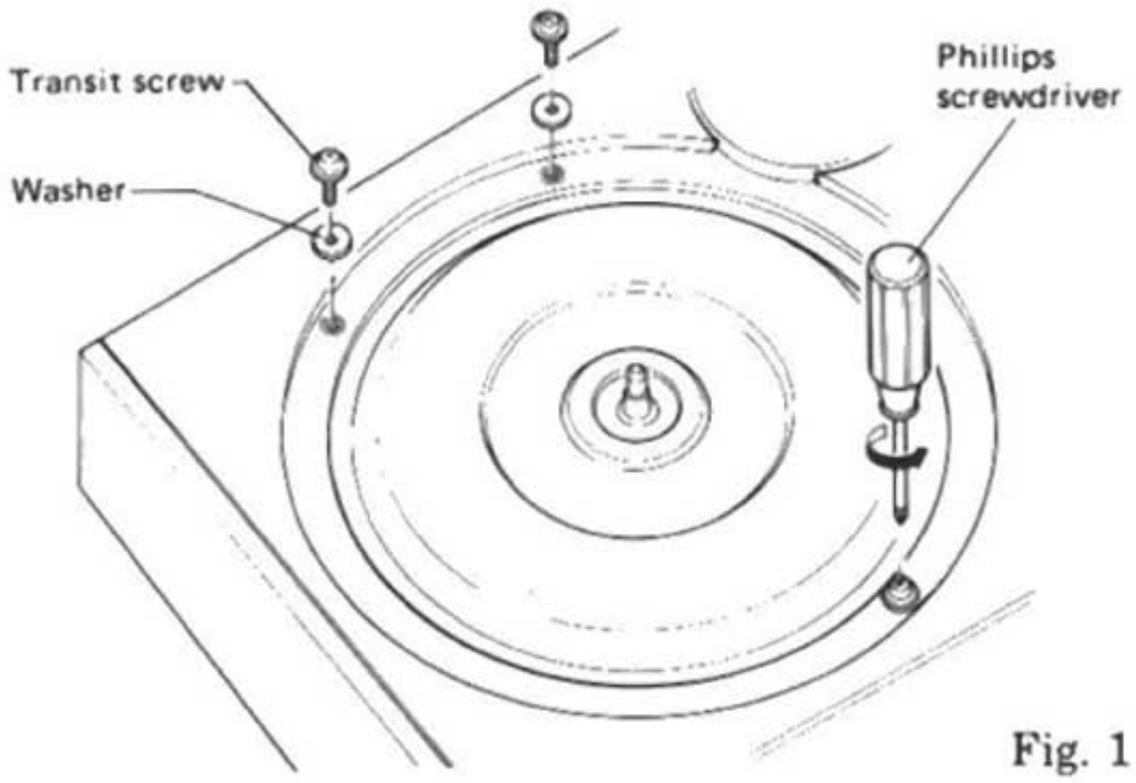


Fig. 1

CHECK THE ACCESSORIES

The accessory box contains the parts shown in the Fig. 2. Check that they are all inside. The EP adaptor is used for records with a large center hole, and the screwdriver is required for adjustments and when mounting the cartridge. Store these parts safely.

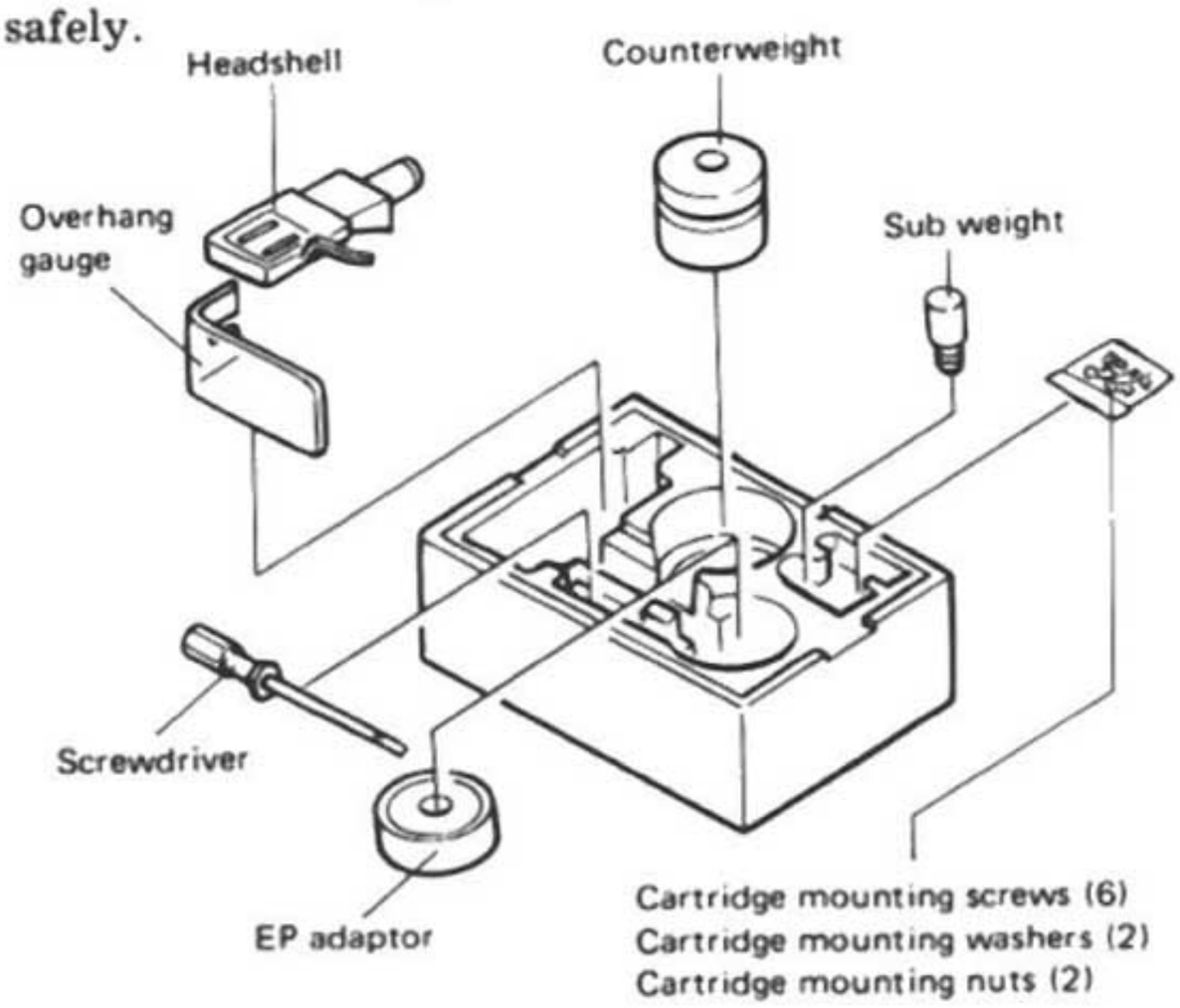


Fig. 2

ATTACHING THE CARTRIDGE (Applicable to HGT and ST model only)

Follow the procedure below for attaching the cartridge to the accessory headshell.

1. Connect the headshell leads to the cartridge. Refer to Fig. 3 for the polarity of these leads and connect plus to plus and minus to minus.

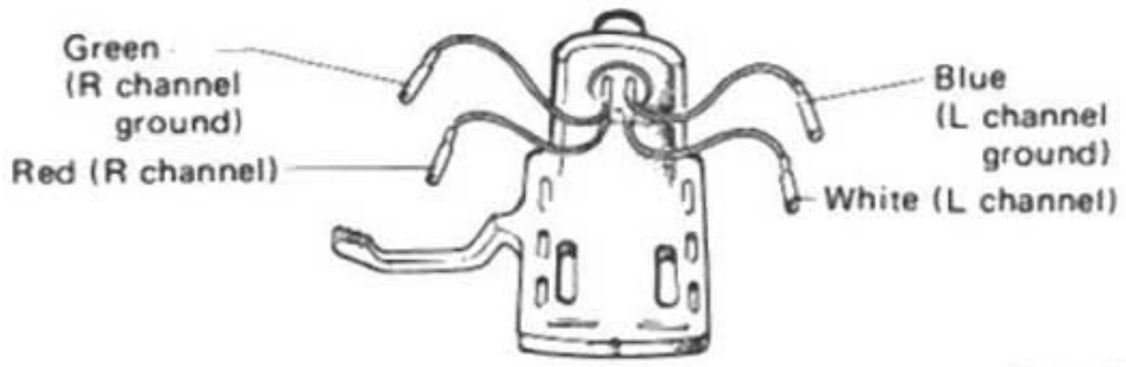


Fig. 3

2. Secure the cartridge to the headshell temporarily using the accessory cartridge mounting screws, washers and nuts, as shown in Fig. 4.

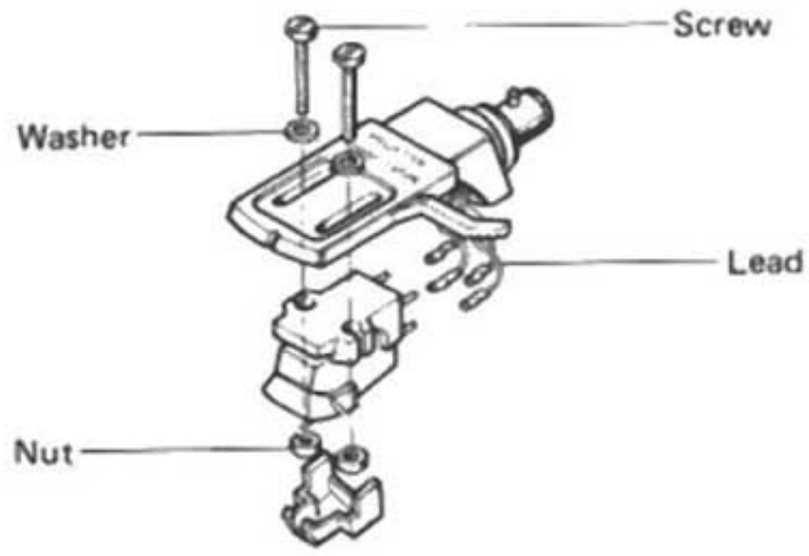


Fig. 4

3. Refer to Fig. 5 and use the accessory overhang gauge to adjust the overhang so that cartridge stylus tip is positioned over the indicator line of the gauge, and then tighten the cartridge mounting screws. Make sure that the cartridge does not tilt to one side (Fig. 6). If there is any tilting, you will not be able to obtain a normal stereo effect.

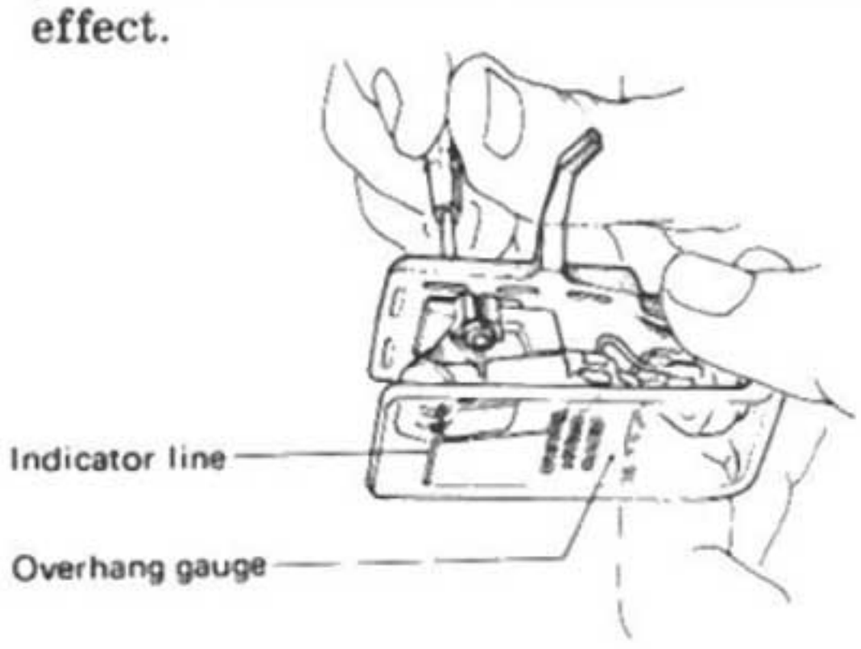


Fig. 5

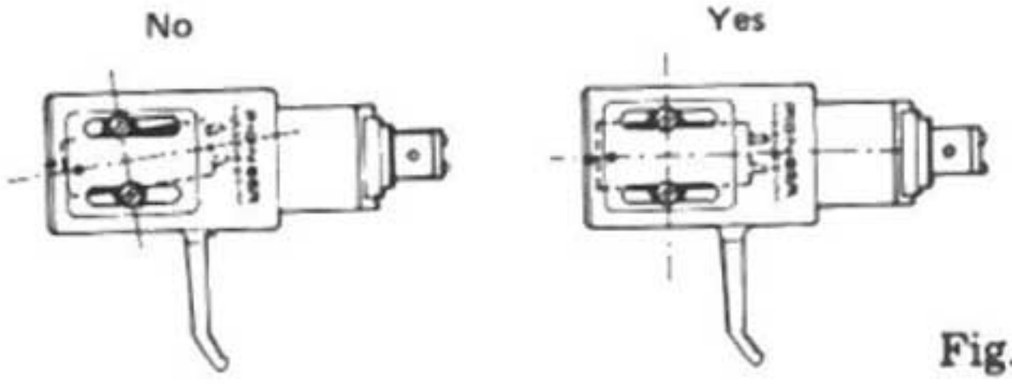
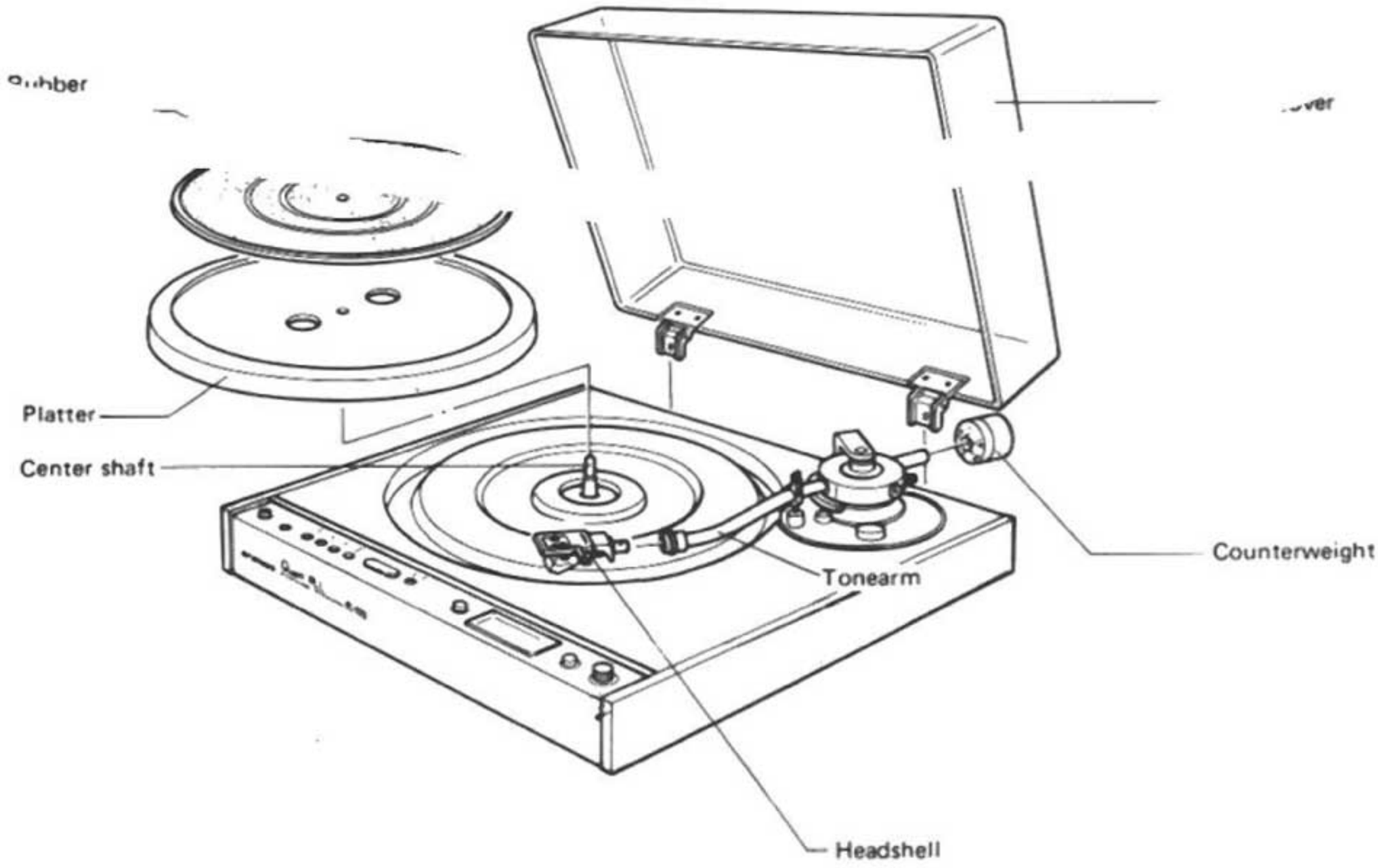


Fig. 6

ASSEMBLY PROCEDURE

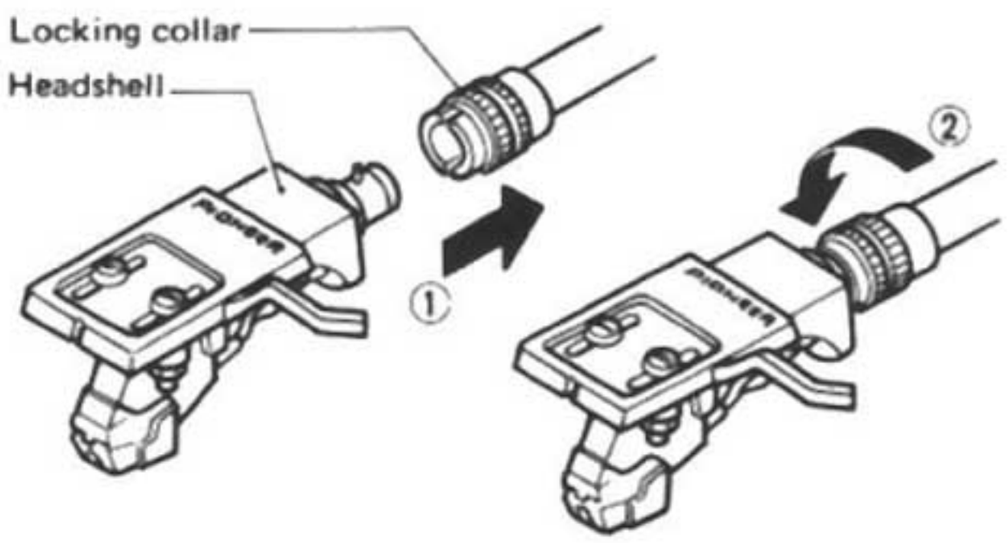


1. MOUNTING THE PLATTER AND RUBBER PLATTER MAT

Refer to the assembly figure, and place both the platter and the rubber mat down over the center shaft. The platter is heavy, so use both hands to lift it horizontally over the shaft and into position.

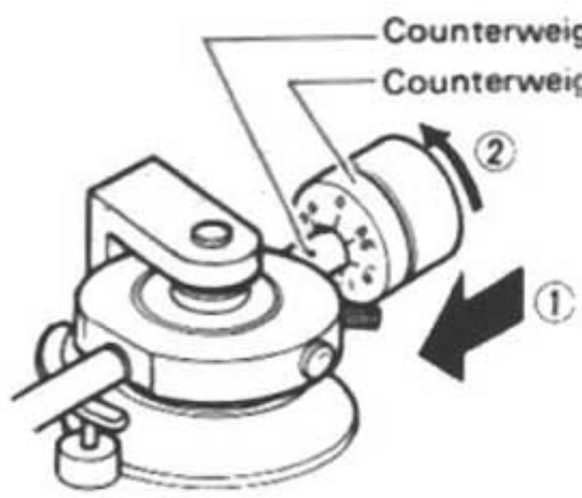
2. MOUNTING THE HEADSHELL

Insert the headshell (with the cartridge) into the end of the tonearm, and rotate the locking collar in the direction indicated by the arrow in the figure until it stops. Then secure it.



3. MOUNTING THE COUNTERWEIGHT

Slide the counterweight onto the counterweight shaft on the rear of the tonearm and push it forward. Then rotate it two or three turns in the direction of the arrow.



INSTALLATION PRECAUTIONS

When installing this turntable, make sure that you avoid the following conditions:

Conditions to be avoided	Possible problems caused
(1) Exposure to direct sunlight, high temperatures or high humidity.	(1) Can cause rust or interfere with insulation.
(2) Unstable surfaces.	(2) Will interfere with normal operation of turntable (stylus will *jump, etc.).*
(3) Dirty or dusty locations.	(3) Can cause scratch noise.
(4) Exposure to heavy vibrations, such as on the top of speakers, etc.	(4) Can cause howl.
(5) Proximity to power transformer of the amplifier.	(5) Can cause hum.
(6) Locations where alcohol, insecticides, or inflammable substances are frequently used.	(6) Can corrode dust cover or outside of cabinet.

If the turntable is brought into the warm from previously cold surroundings, or if the room temperature rises suddenly, moisture will form on the operating sections and the turntable will not be able to display its performance to the full.

If confronted with a situation like this, leave the turntable in its new environment for about an hour or try and increase the room temperature gradually before operation.

CONNECTIONS TO STEREO AMPLIFIER

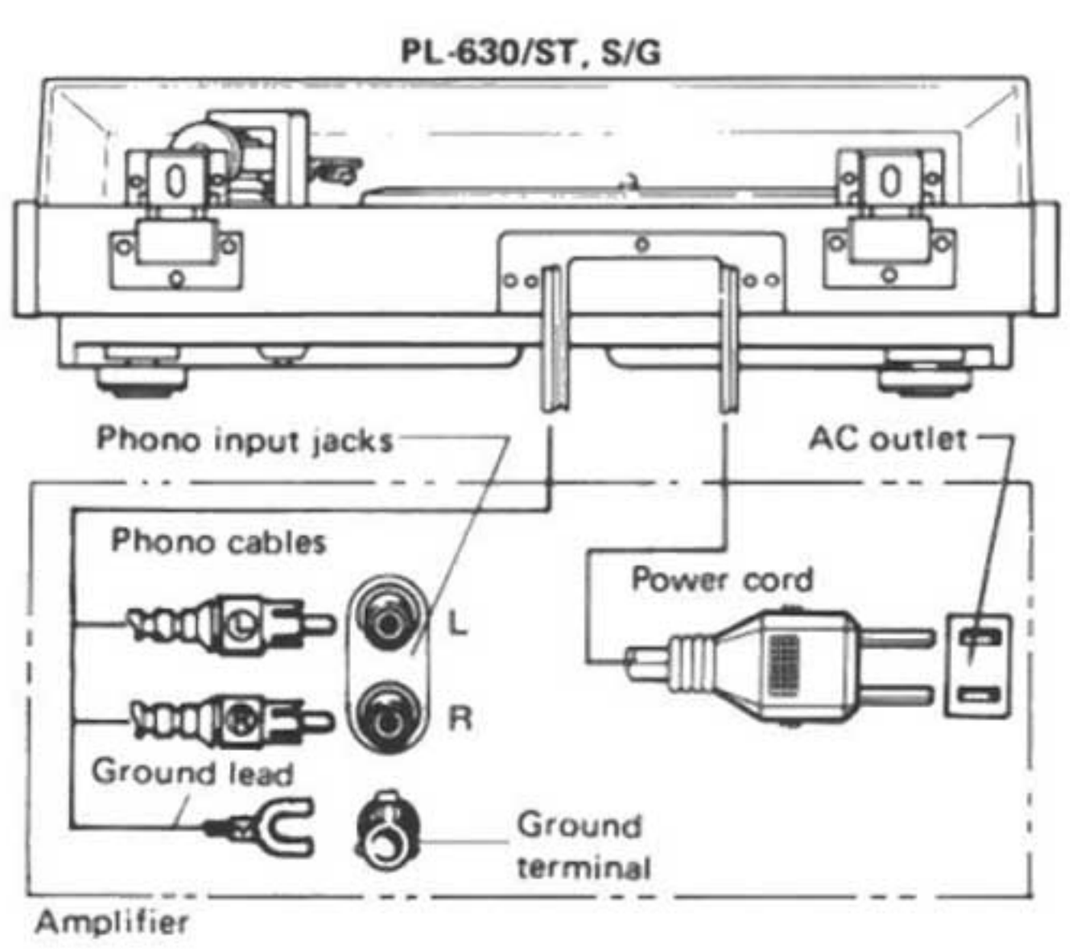
Perform the connections after you have completed the tonearm adjustments.

BEFORE CONNECTING, CHECK THE FOLLOWING:

- Switch the power OFF of the amplifier to safeguard against damage to the speaker system.
- If you are using a low-output moving coil (MC) cartridge, you will need a special MC transformer or a head amplifier, or you will require a stereo amplifier with a built-in MC amplifier.

CONNECTION PROCEDURE (Fig. 7)

1. Insert the phono cables (white and red) into the PHONO jacks of the stereo amplifier (white for left channel into the L jack, and red for right channel into the R jack).
2. Connect the ground wire with the Y-shaped connector at the end to the ground terminal.
3. ST, S/G model: Insert the power plug into the convenience AC outlet of the amplifier.
   HGT model: With the aid of a power cord, connect the AC INLET to a wall AC outlet.



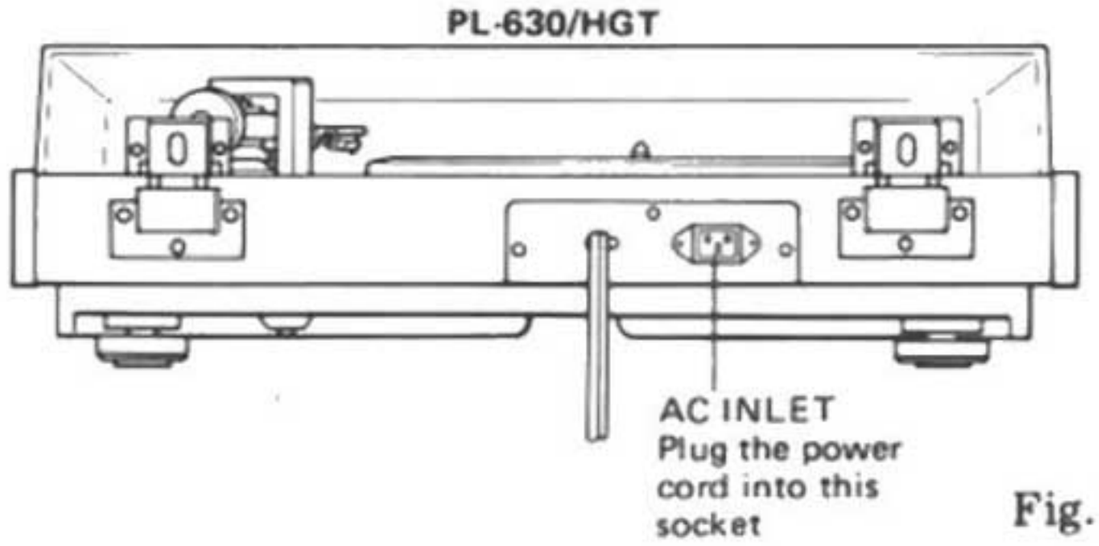


Fig. 7

ADJUSTING THE TONEARM

Adjusting the tonearm has a marked effect on the reproduced sound from records. Proceed with the adjustments after you have completed the assembly, installation and connections to the amplifier.

TRACKING FORCE ADJUSTMENT

If the correct tracking force is not applied, the reproduced sound will be distorted and the stylus may jump during play. Follow the procedure outlined below to apply the correct tracking force for the cartridge which is attached to the headshell.

Adjust the horizontal balance

1. Set the POWER switch to ON. The ARM ELEVATION switch's DOWN (▼) indicator should now light up. Check that it is on. Now press the POWER switch again and set to OFF.

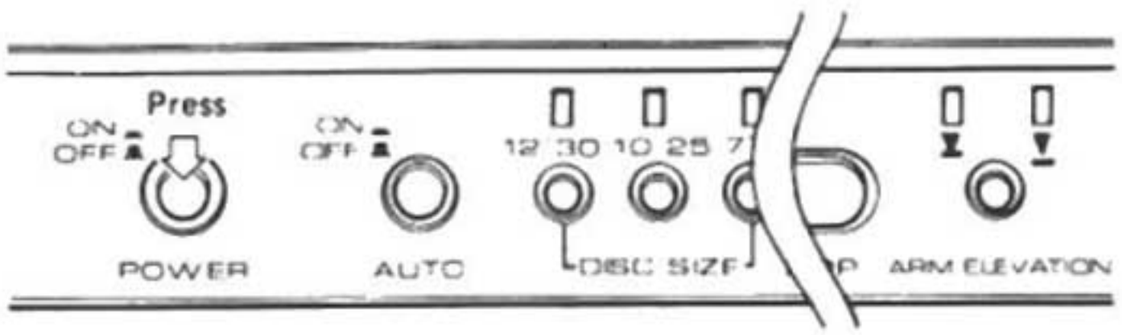


Fig. 8

2. Rotate the ANTI-SKATE knob and set the "0" to the index line (Fig. 9).

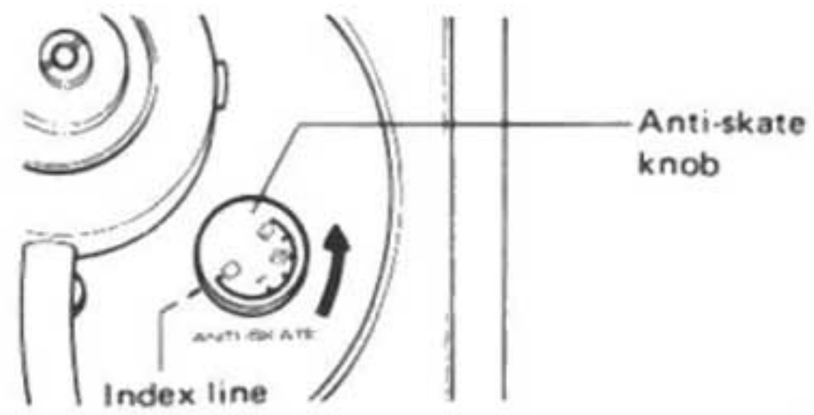


Fig. 9

3. Remove the stylus cover if one is attached to the cartridge.
4. Lower the arm rest clamp to the right (Fig. 10). This frees the tonearm so that it can now move. Take care that you do not damage the stylus.

Fig. 10

5. Place your finger under the headshell's finger lift, and hold it between the arm rest and platter. Use one hand to support the tonearm and the other to rotate the counterweight so that the tonearm is perfectly horizontal, without tilting to the headshell side or counterweight side. If the cartridge is too heavy and the horizontal balance cannot be attained, attach the accessory sub-weight to the tonearm's counterweight shaft as shown in Fig. 12.

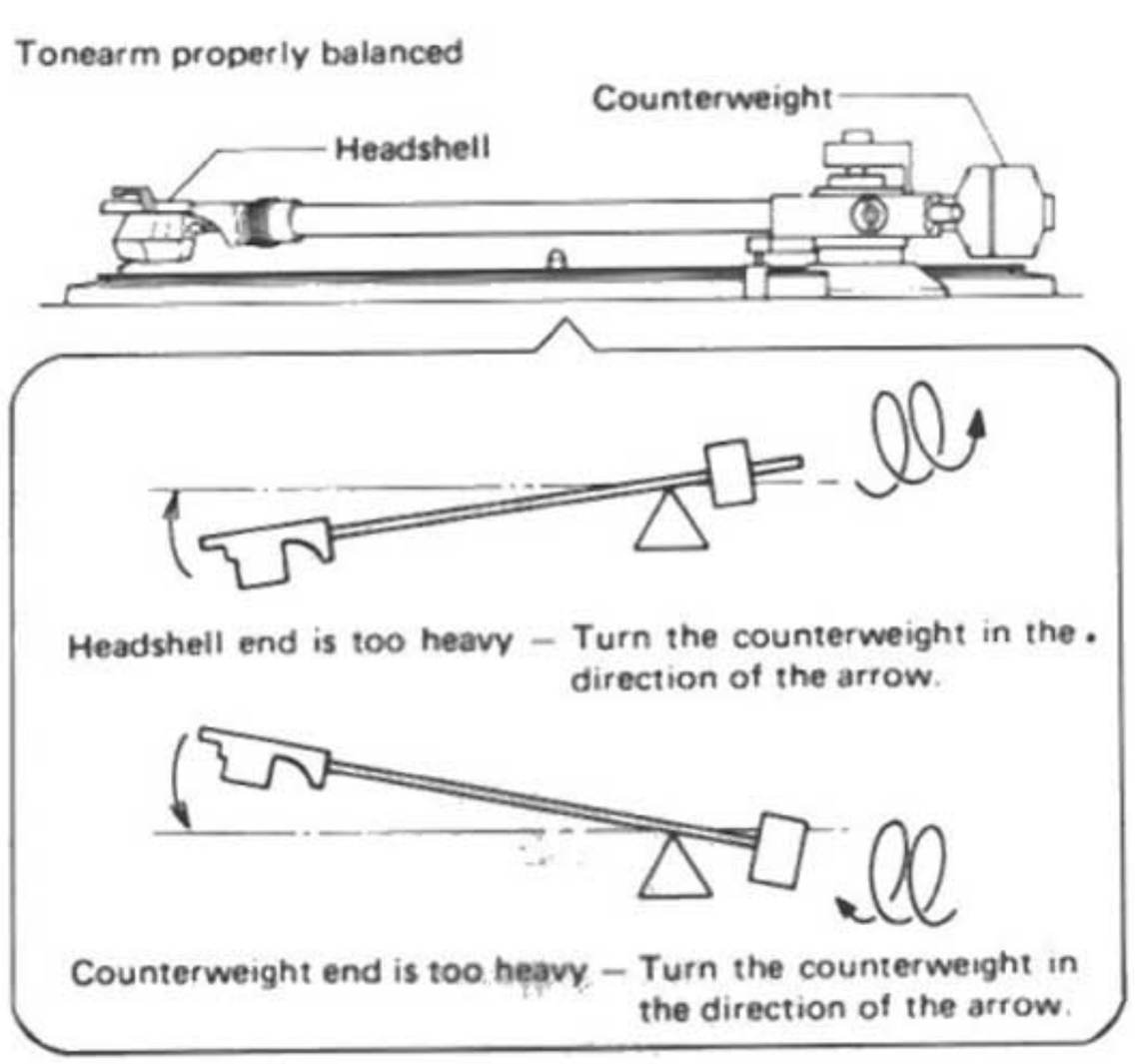

Tonearm properly balanced
Counterweight
Headshell
Headshell end is too heavy — Turn the counterweight in the direction of the arrow.
Counterweight end is too heavy — Turn the counterweight in the direction of the arrow.

Fig. 11

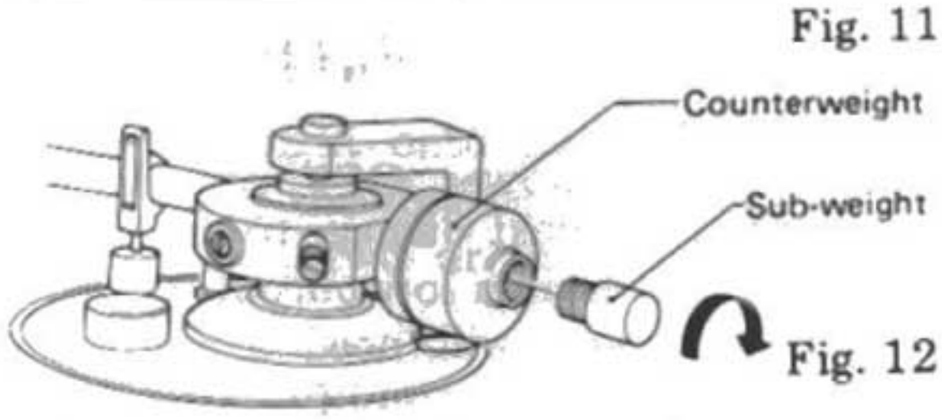


Fig. 12

6. Return the tonearm to the arm rest and secure with the clamp.

When the ANTI-SKATE knob is at the '0' position, the tonearm may move a little to the left or right. This is due to the enhanced sensitivity of the rotating section of the tonearm designed so that the tonearm traces the sound grooves on the record more efficiently during record play. This does not, therefore, interfere at all with play.

Applying the tracking force

1. Rotate the tracking-force scale ring and set the "0" to the index line of the counterweight shaft (Fig. 13). Do not rotate the counterweight since this will throw the cartridge out of horizontal balance and prevent the correct tracking force from being applied.

2. As in Fig. 14, rotate the counterweight in the direction of the arrow, and set the number on the scale ring corresponding to the correct cartridge to the index line on the counterweight shaft. The tracking-force scale ring has 0.5 gram graduations, and one full turn of the counterweight will yield a tracking force of 3 grams.

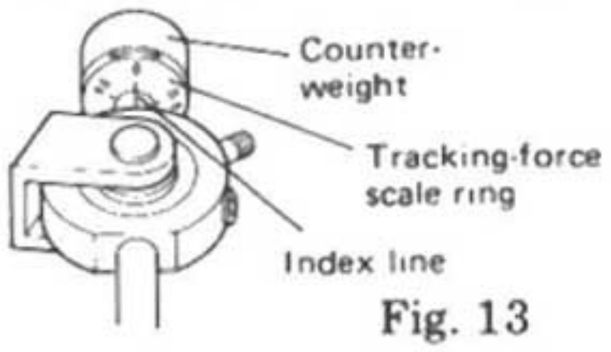


Fig. 13

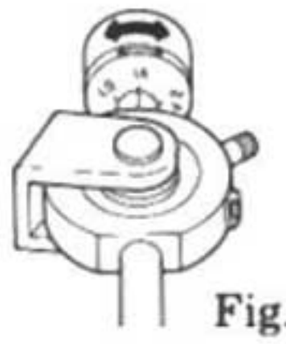


Fig. 14

• The PC-600 cartridge that comes with the PL-630/S/G has a tracking force of 1.5 grams. Turn the counterweight to the 1.5 mark.

• When playing records at low temperatures or when playing records where the stylus is made to jump or the reproduced sound is distorted (records where part of the recording level is set at an extremely high level), adjust the tracking force to the optimum value across the suitable range.

ANTI-SKATING ADJUSTMENT

Rotate the ANTI-SKATE knob in the direction of the arrow in Fig. 15, and set the value which is identical to the applied tracking force to the index line.

Fig. 15

ANTI-SKATING MECHANISM

When a record is being played, the stylus is drawn toward the inside of the sound grooves (skating force) by the rotations of the record. This downgrades the tracking ability of the right channel, increases the distortion and has other adverse affects on the reproduced sound. What the anti-skating mechanism does is to apply a force in the opposite direction that cancels out the skating force.

TONEARM HEIGHT ADJUSTMENT

If the tonearm and the platter are not both parallel when a record is being played, the cartridge stylus will not come into contact with the sound grooves on the record at the right angle and this may result in distortion of the reproduced sound. Perform the adjustments below as follows;

Adjusting the tonearm height

1. Place a record on the platter.
2. Use one hand to support the tonearm, and the other hand to loosen the adjustment screw with the coin. Place the stylus on the record lightly not to damage, and adjust the tonearm so that it is parallel to the record on the platter and then tighten the adjustment screw (Fig. 16).

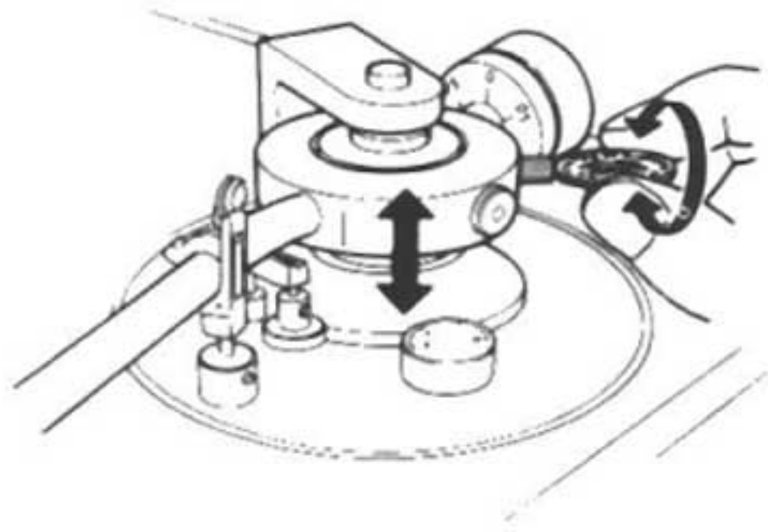


Fig. 16

Adjusting the arm rest height

Use the accessory screwdriver to loosen the arm rest's set screw (Fig. 17). Adjust the arm rest so that the tonearm and the panel are parallel, and then tighten the set screw.

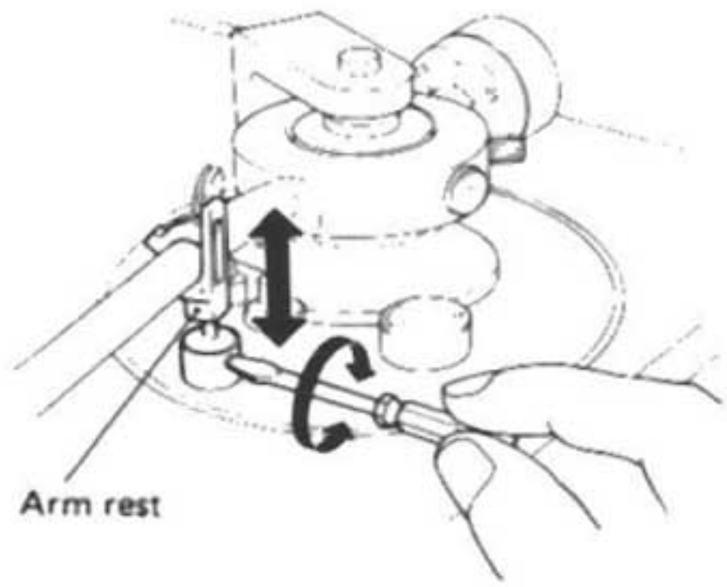


Fig. 17

Adjusting the arm lifter height

Set the POWER switch to ON, press the ARM ELEVATION switch and cause the UP (▼) indicator to light up. As in Fig. 18, loosen the arm lifter set screw with the accessory screwdriver, adjust for a clearance between the record and stylus of about 8 mm when the tonearm moves over the platter, and then tighten the set screw.

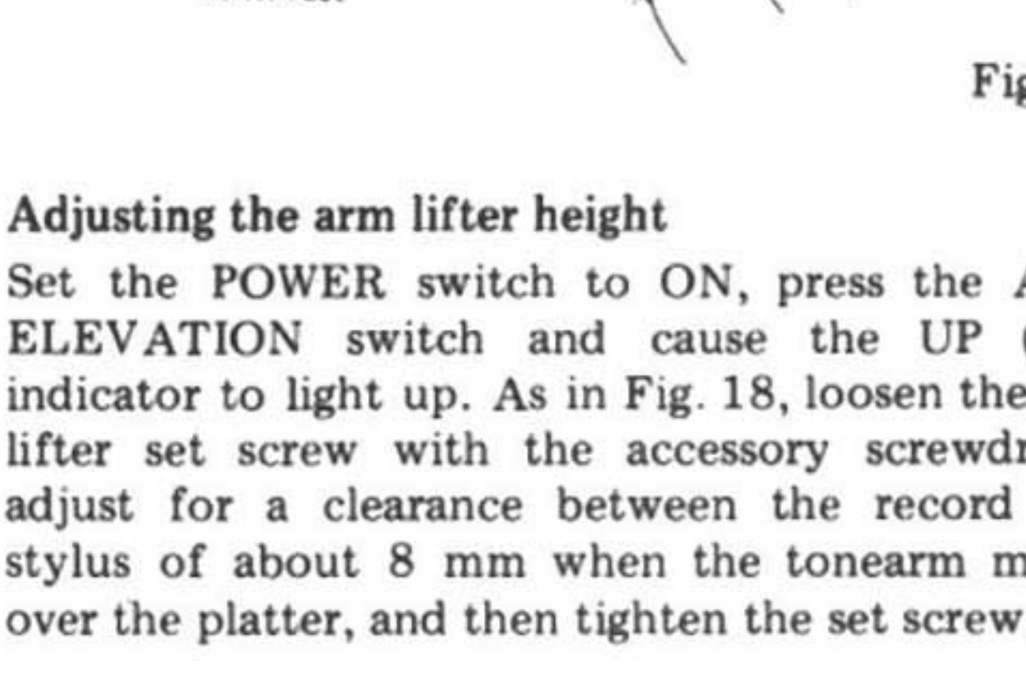


Fig. 18

PANEL FACILITIES

POWER SWITCH

ON . . . . . Press this switch and the power will come on. The ARM ELEVATION switch indicator (▼) and SPEED switch indicator (45 or 33) will both light up.

OFF . . . . The power will be cut off when this switch is released, and the indicators will go off.

NOTES:

- *The platter will not rotate when the tonearm is on the arm-rest even when the POWER switch is set to ON.*
- *Always set the POWER switch to OFF when you do not intend to use your turntable.*

AUTO SWITCH

ON . . . . . Select this position for auto play (refer to page 10). When this switch is pushed, the DISC SIZE indicator (12"30) lights up.

OFF . . . . . When this switch is released, the auto mechanism is disengaged, and all the operations can be performed by hand. Set the switch to this position when playing a record whose size is not standardized since the tonearm will otherwise return to the arm rest automatically. When this switch is set to OFF, you will not be able to perform auto play and repeat play operations. For record play, move the tonearm manually.

NOTE:

- *When the AUTO switch is set to OFF, the DISC SIZE and REPEAT switch indicators will not light up even if the respective switches are pushed.*

DISC SIZE SWITCHES

Press the switch that corresponds to the size of the record you want to hear for auto play operations. The corresponding switch indicator will then light up.

12"30 . . . . . For 30cm records

10"25 . . . . . For 25cm records

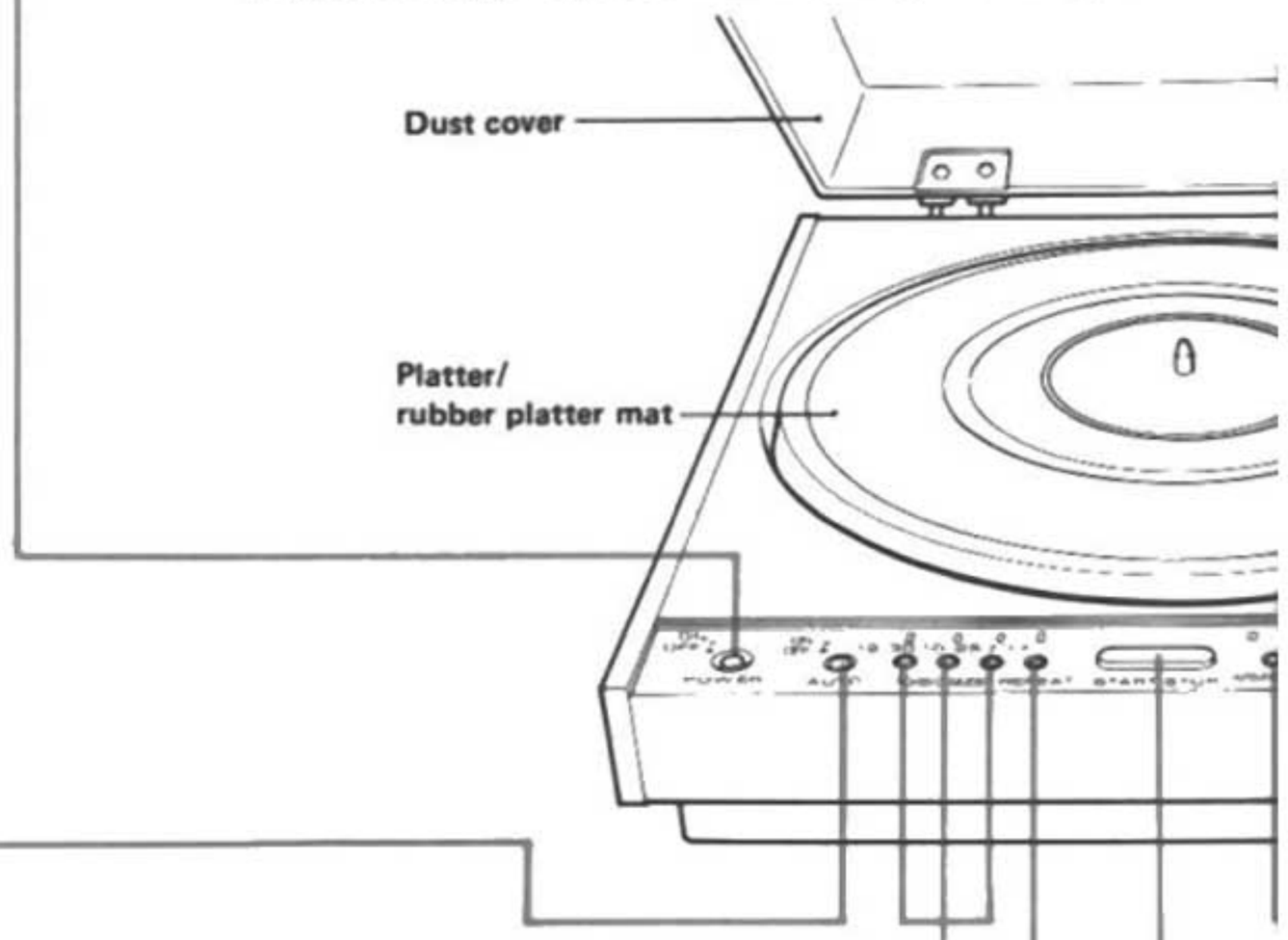
7"17 . . . . . For 17cm records

NOTES:

- *The 12"30 switch is selected automatically when the POWER switch is set to ON.*
- *These switches will not work if depressed when the tonearm is moving (auto return).*

NOTE:

- *If you operate the PL-630 with a electrostatic-charged hand, it may sometimes malfunction. In such a case, switch the power off. Then turn it on again and operate.*



REPEAT SWITCH

Press this switch for repeat play. When pressed, the indicator will light up, and the record will be played again (refer to page 11 for further details on repeat play). Press this switch again to release it. The indicator will go off and the repeat play function will be released.

NOTES:

- *This switch cannot be operated even if depressed while the tonearm is moving out of contact with the record.*
- *There will be no repeat play when the AUTO switch is set to OFF.*

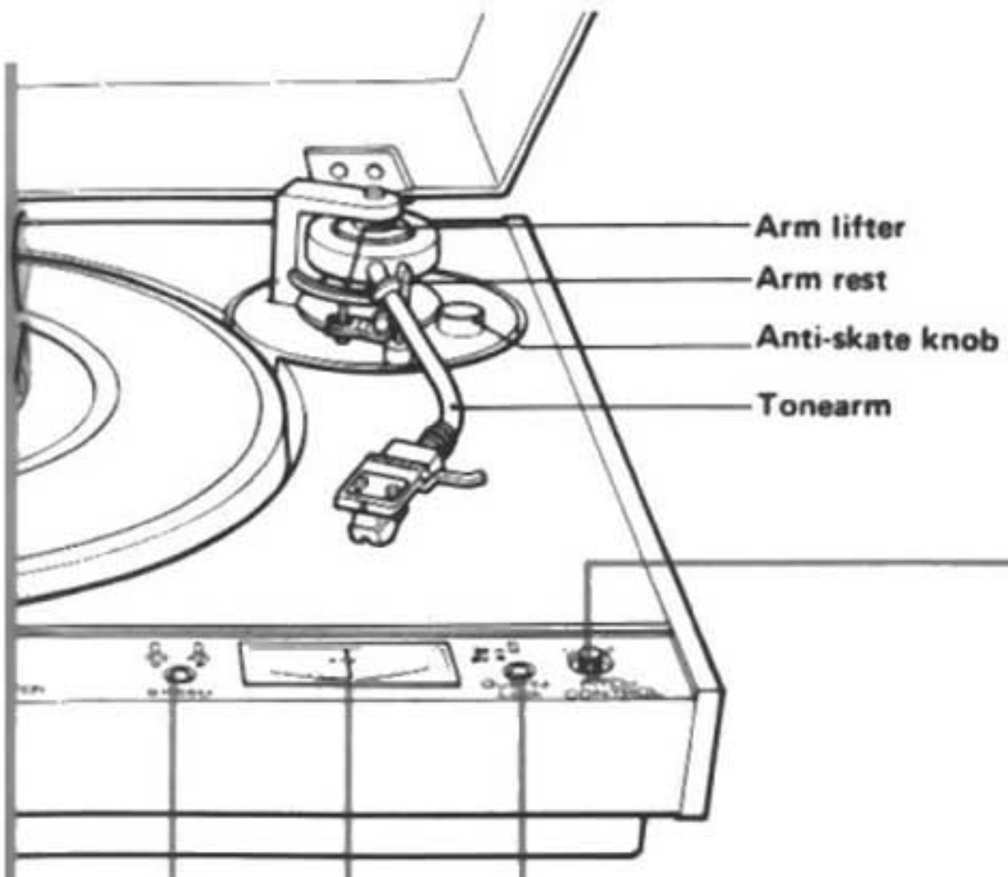
START/STOP SWITCH

Press this switch for auto play. The platter will start to rotate, the tonearm will automatically move over to the edge of the record and play will begin (auto lead-in).

If this switch is pressed during play, the tonearm will automatically return to the arm rest, the platter will stop rotating and play will be suspended (auto cut).

NOTES:

- *This switch's STOP function has no effect on tonearm movement unless the tonearm is in contact with the record.*
- *This switch cannot be selected when the AUTO switch is set to OFF.*



PITCH CONTROL KNOB

If this knob is rotated with the Quartz LOCK switch at OFF, you will be able to increase or decrease the speed of the platter in respect to its rating. When the knob is rotated in the "+" direction, the platter will rotate faster, and when rotated in the "–" direction, it will rotate slower than its rating. The PITCH meter can be observed to check the amount of speed increase or decrease (up to 6% in either case). (For further details, see the section under "PITCH CONTROL on page 11).

QUARTZ LOCK SWITCH

ON . . . . . When this switch is pressed, the Quartz PLL circuitry is actuated and the indicator will light up. The switch is usually kept at this position. The platter will be accurately locked to the rotational speed corresponding to the position of the SPEED switch.

OFF . . . . When this switch is released, the Quartz PLL circuitry is disengaged, the PITCH meter lights up and the indicator goes off. Set the switch to this position for instrumental and other performances in accordance with the record being played. (Refer to the section under "PITCH CONTROL on page 11).

SPEED SWITCH

33 . . . . . Set the switch to this position when playing a 33-1/3rpm record such as an LP. When it is depressed, the 33 indicator lights up, and the platter rotates at a speed of 33-1/3rpm.

45 . . . . . Set the switch to this position when playing a 45rpm record like an EP. When it is depressed, the 45 indicator lights up, and the platter rotates at a speed of 45rpm.

PITCH METER

When the Quartz LOCK switch is set to OFF, the PITCH meter lamp will light up, and the variation in the rotational speed of the platter in respect to its rating (33-1/3 or 45rpm) can be read out on the meter.

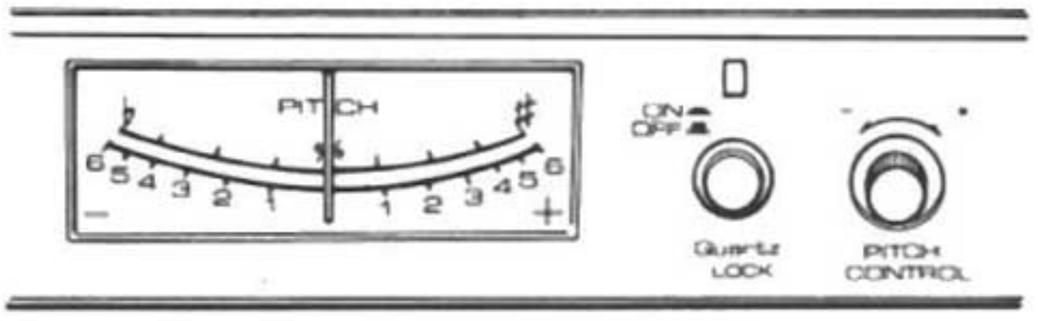
ARM ELEVATION SWITCH

Use this switch to interrupt play temporarily or to perform manual play.

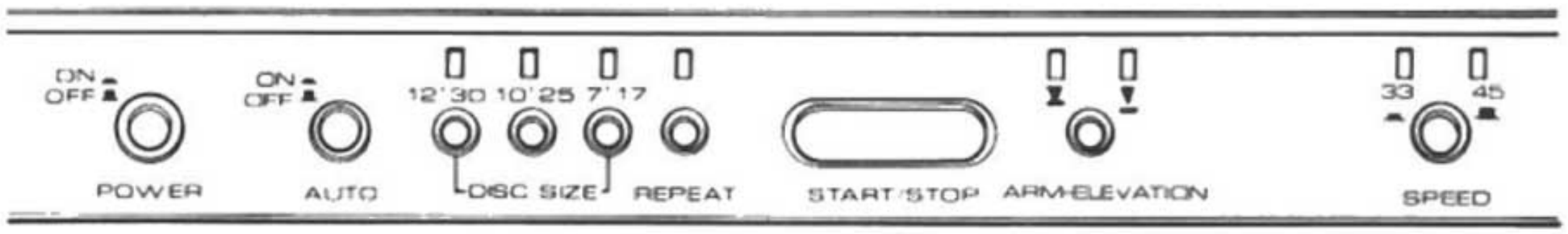
When the DOWN (▼) indicator lights up, the tonearm will descend and when the UP (▼) indicator lights up, the tonearm will rise. These two operations will be performed alternately every time the switch is pressed.

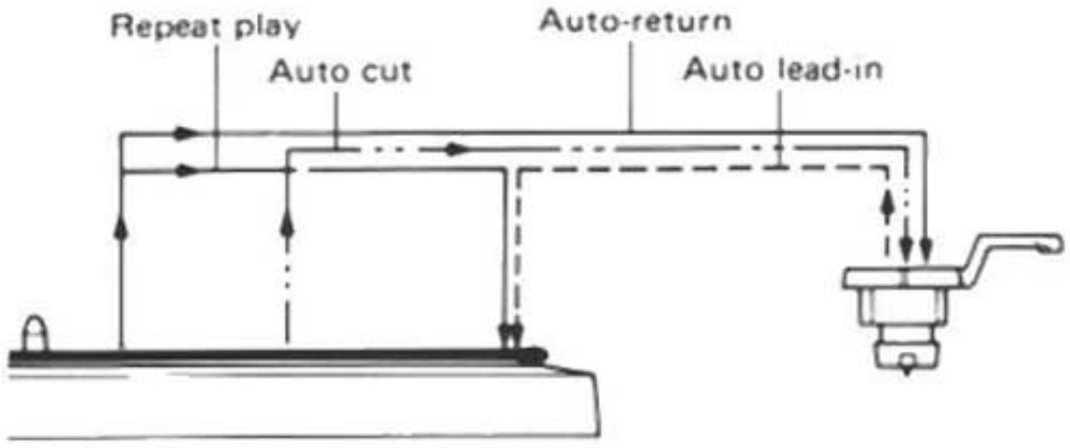
NOTES:

- *When the POWER switch is set to ON, the tonearm will descend and the DOWN indicator lights up.*
- *Always set the switch to DOWN for auto play.*
- *When the switch is at UP, the auto return cancelling mechanism is actuated and so there will be no auto return or auto cut.*



PLAYING PROCEDURE





BEFORE PLAY

Always perform the following operations before play.

1. Set the volume control on the stereo amplifier to its lowest position, and then set the power switch to ON. Set the function switch to PHONO.
2. Set the turntable's POWER switch to ON.
3. Raise the dust cover, and release the arm rest clamp.
4. Place a record on the platter.
5. Select the SPEED switch in accordance with the record.
6. Set the Quartz LOCK switch to ON. Refer to "PITCH CONTROL" if you plan to leave the switch at OFF and adjust the rotational speed of the platter.
7. Lower the dust cover.

AUTO PLAY

Procedure

1. Set the AUTO switch to ON.
2. Press the DISC SIZE switch that corresponds to the size of the record which you have placed on the platter.
3. Press the START/STOP switch. The platter starts rotating, and after the tonearm has moved from the arm rest to the lead-in groove on the record, the stylus will drop gently onto the record and play will commence (auto-lead-in).
4. Adjust the volume and tone to the preferred levels using the controls on the stereo amplifier.

Completion

1. When the last track on the record has been played, the tonearm will rise automatically and return to the arm rest. The platter will then stop (auto-return).
2. Secure the tonearm to the arm rest with the clamp.
3. Set the POWER switch to OFF.

NOTE:
The START/STOP, DISC SIZE, ARM ELEVATION and REPEAT switches will not function during the auto-return operation. Operate any of these switches after the tonearm has returned to the arm rest.

Suspension of play

Proceed as follows if you want to suspend play during a performance.

- Press the START/STOP switch and the tonearm will return automatically to the arm rest, and the platter will stop rotating (auto cut).

NOTE:
There will be no auto cut operation when the ARM ELEVATION switch is at UP.

- To suspend play temporarily, press the ARM ELEVATION switch. The UP indicator will light up, the tonearm will rise, and play will be suspended. When the ARM ELEVATION switch is pressed again, the tonearm will descend, and play will commence at that position on the record where play was suspended.

REPEAT PLAY

Proceed as follows if you want to listen to the same record again and again:

1. Set the AUTO switch to ON.
2. Press the REPEAT switch.
3. Press the START/STOP switch and play will begin.
4. When the last track on the record has been played, the tonearm will rise, return to the first track, descend onto the record, and play will be repeated.

Press the REPEAT switch again to release the repeat play function. The function can also be released by pressing the START/STOP switch and suspending play or by setting the POWER switch to OFF.

MANUAL PLAY

Manual play is convenient in the following instances.

- For playing tracks midway through a record
- For playing just one track on an LP
- For repeatedly playing the last tracks of an LP (set the AUTO switch to OFF).

Procedure

1. Follow the instructions under "BEFORE PLAY" of the previous section.
2. Press the ARM ELEVATION switch and set it to UP.
3. Move the tonearm to immediately above the track on the record you want to hear, and the platter will now start to rotate.
4. Press the ARM ELEVATION switch and set it to DOWN. The tonearm will now descend onto the record, and play will begin as soon as the stylus starts tracing the grooves.
5. Adjust the volume and tone to the preferred levels using the controls on the stereo amplifier.

NOTES:

- *When the AUTO switch is set to ON, the tonearm will automatically return to the arm rest and the platter will stop rotating when the record has been played.*
- *When the AUTO switch is set to OFF, the tonearm will not return even when the record has been played. Move the tonearm after you have pressed the ARM ELEVATION switch and it has risen. The platter will stop rotating when the tonearm is returned to the arm rest.*

TIMER PLAY

If you use a timer and set it as instructed below, the turntable will play a record automatically at the preset time.

1. Follow the instructions under "BEFORE PLAY" of the previous section.
2. Press the ARM ELEVATION switch and set it to UP.
3. Move the tonearm over the record by hand.
4. Set the timer switch as instructed in the timer's "Operating Instructions" so that the turntable and stereo amplifier will operate at the time you want to listen to the record.

When the timer is actuated, and the POWER switches of the amplifier and turntable are set to ON, the tonearm will automatically descend and play will begin.

NOTE:
When the timer play operation comes to an end with the AUTO switch in the ON position:
When you want to enjoy the auto play successively after the end of the timer play operation, be sure to depress the DISC SIZE switch which corresponds to the size of the record you are going to play, and the START/STOP switch.
Failure to do so will cause the stylus to descend improperly onto the record, which in turn may damage the record and the stylus.

PRECAUTIONS FOR PLAY

- Before and after play, clean the stylus with a brush. It is also a good idea to clean your records with a good quality cleaner.
- Place one record at a time on the platter. If two or more records are stacked on the platter, the stylus will not make proper contact with the sound grooves, and this will therefore impair the performance.
- Do not cause the turntable to vibrate during record play. This causes the stylus to jump grooves and it damages not only the stylus tip but also the record.
- Do not switch off the amplifier's power or stop the platter rotating by unplugging the power cord during record play. These actions damage the stylus and record.
- Do not hold the platter during record play or touch the tonearm while it is moving. These actions can cause a breakdown.

PITCH CONTROL

In normal circumstances, the platter rotates at the rated speed when the Quartz LOCK switch is kept at ON. If you want to vary the speed, set this switch to OFF and turn the PITCH CONTROL knob. If the platter rotates faster than its rated speed, the musical intervals of the reproduced sound will become higher, and if it rotates slower, they will become lower.

Nowadays, there are slight variations in the orchestra and other tuning sounds recorded on discs. Furthermore, pianos and other musical instruments for the home are tuned to high international standards and so there are slight discrepancies in the musical intervals when practicing on the piano along with a record. This turntable features a pitch control which allows you to compensate for the slight variations in the musical intervals by making the platter rotate up to 6% faster or slower than its rated speed. The compensation can be checked by ear. An adjustment of ±6% is equivalent to about a semitone.

ADJUSTMENT OF STYLUS DESCENT POSITION

If the stylus does not descend properly onto the record during auto play, perform the following adjustments:

1. Place a 30cm LP on the platter.
2. Commence play by following the procedure on page 10. Check the direction and extent of the stylus deviation.
3. Support the tonearm with one hand, remove the rubber plug and check the head of the adjustment screw from above the hole. If the head of the screw has shifted slightly from the hole, move the tonearm a little to the inside or outside (Fig. 19).
4. Rotate the adjustment screw with the accessory screwdriver as follows and adjust (Fig. 20).
   Stylus descends outside of lead-in groove: turn adjustment screw clockwise.
   Stylus descends inside of lead-in groove: turn adjustment screw counterclockwise.
5. After the adjustment, return the tonearm to the arm rest manually, proceed with record play again, and check that the descent position has been adjusted properly.

NOTE:
Take every precaution not to damage the record or stylus when performing these adjustments.

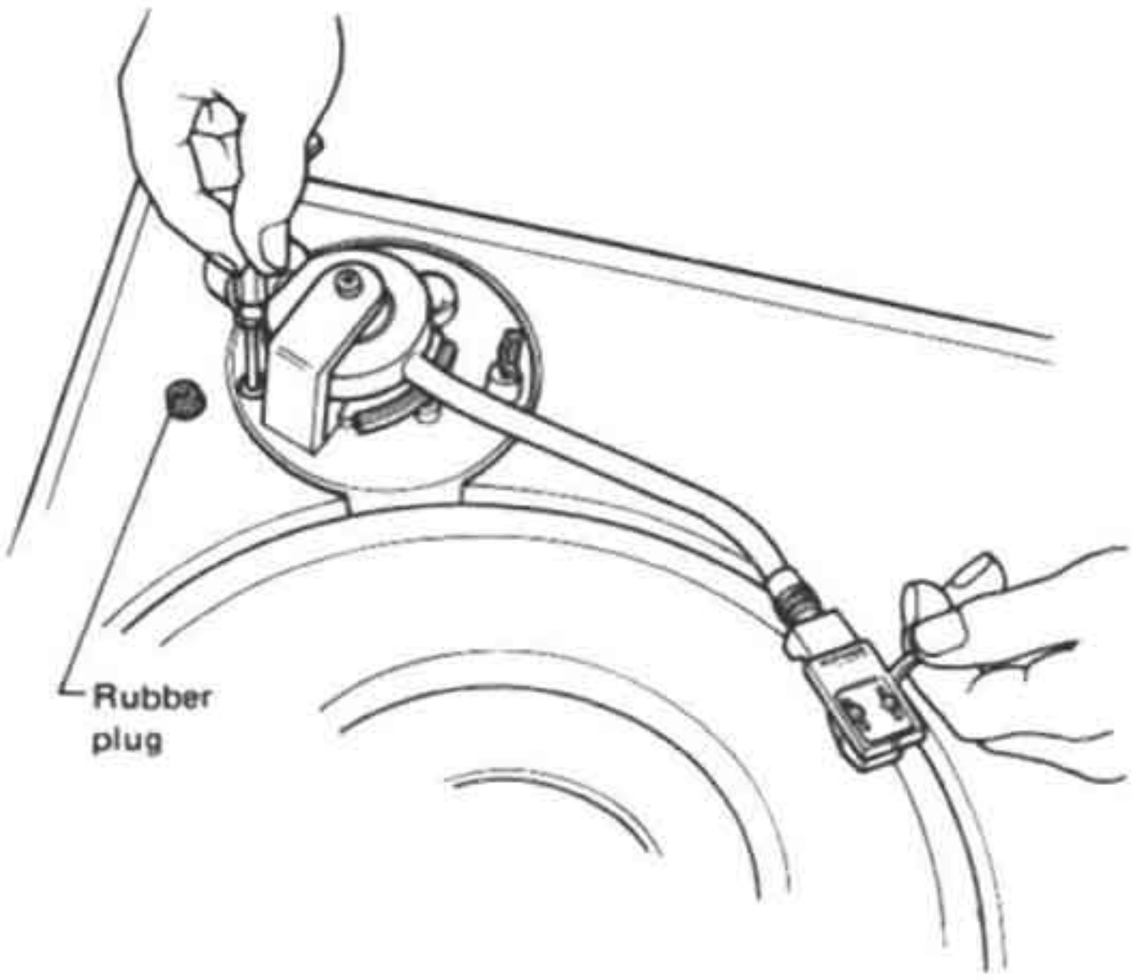


Fig. 19

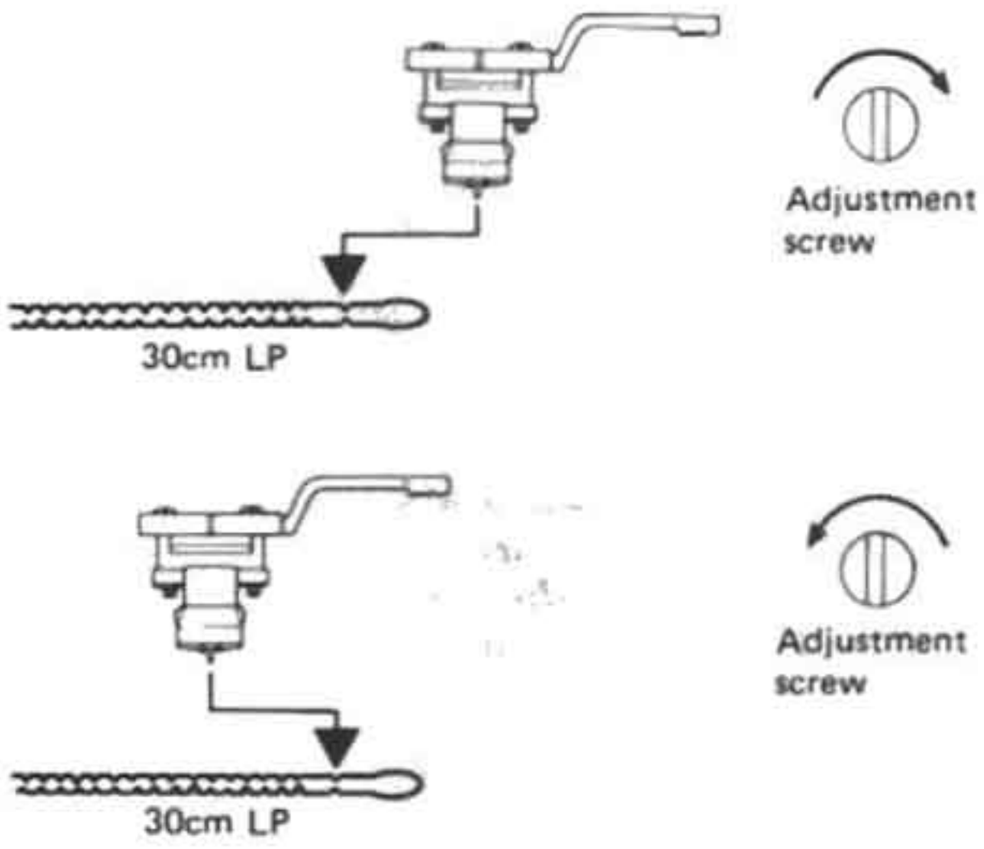


Fig. 20

MAINTENANCE

CABINET AND DUST COVER

When the cabinet or dust cover becomes dusty or dirty, wipe it clean with a soft dry cloth. Remember that the surfaces can be corroded by furniture wax, thinners, and benzine and also by insecticide sprays. The dust cover can be detached and cleaned.

RUBBER PLATTER MAT

When the rubber platter mat is dirty, apply a sponge containing one part neutral cleanser to 5 or 6 parts water and wash. After rinsing well, leave to dry in a well-ventilated location. Never leave it to dry in the sun or in front of a heater since its shape and color will be changed.

LUBRICATION

The motor shaft and bearings of this turntable employ oil-less bearings and so there is no need for lubrication. There is no need to lubricate the tonearm bearings, either.

STYLUS

If the stylus tip is clogged with dust, the reproduced sound quality will be impaired. Use a soft brush to keep the stylus clean at all times. Be careful not to touch the tip since this may damage it. When using stylus cleaner (organic solvent), benzine or thinner to clean the stylus tip, take care not to allow any of the liquid to come into contact with the stylus holder. This may damage the material.

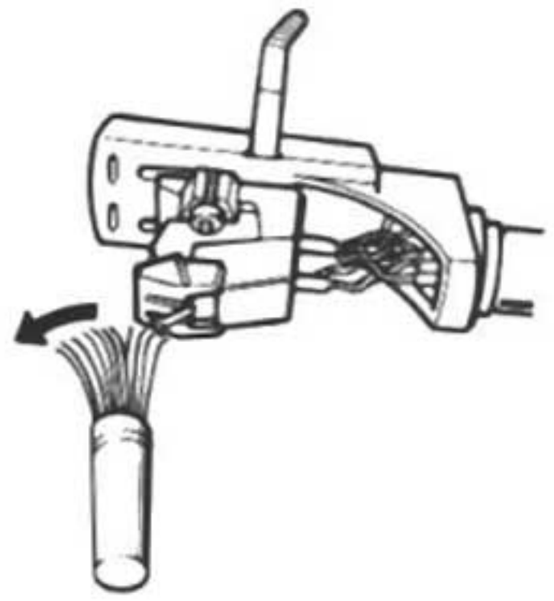


Fig. 21

PC-600 STYLUS REPLACEMENT

(Applicable to S/G model only)

The life expectancy of the PC-600 stylus tip is 800 — 1,000 hours. For the sake of maximum sound quality reproduction, we recommend replacement within the minimum time limit. The stylus tip is replaced by grasping the stylus holder and pulling it away from the body of the cartridge (Fig. 22). The new stylus tip is then inserted by pushing it into the receptacle. The correct replacement tip is the PN-600. This may be obtained at your Pioneer dealer. Pioneer cannot guarantee performance or reliability if another type of stylus is employed.

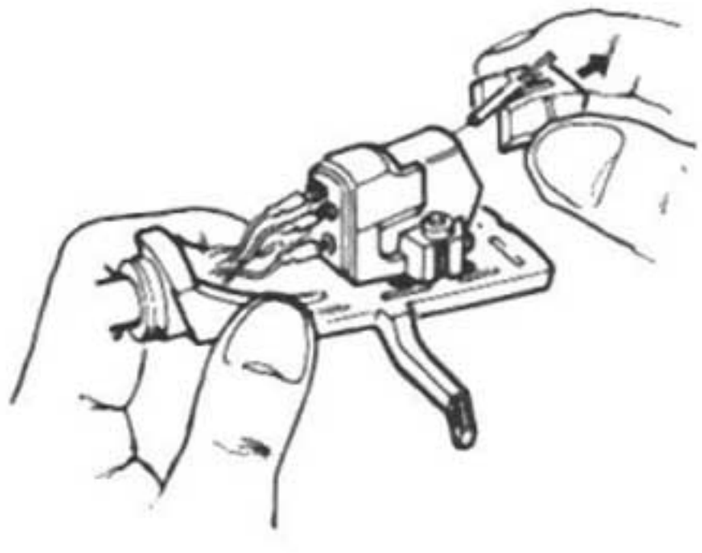


Fig. 22

OPERATION PRINCIPLE OF QUARTZ PLL DIRECT DRIVE MOTOR

1. QUARTZ OSCILLATOR: This is minimally affected by ageing and by variations in the temperature and humidity. It generates a reference signal by which the speed of the phono motor is controlled.

2. FREQUENCY DIVIDING CIRCUIT: This divides the frequency of the reference signal generated by the quartz oscillator.

3. SPEED SELECTION FREQUENCY DIVIDING CIRCUIT: This divides the signal to a reference frequency corresponding to one of the two platter speeds, 45rpm or 33-1/3rpm. It is this signal against which the signal from the frequency generator will be compared.

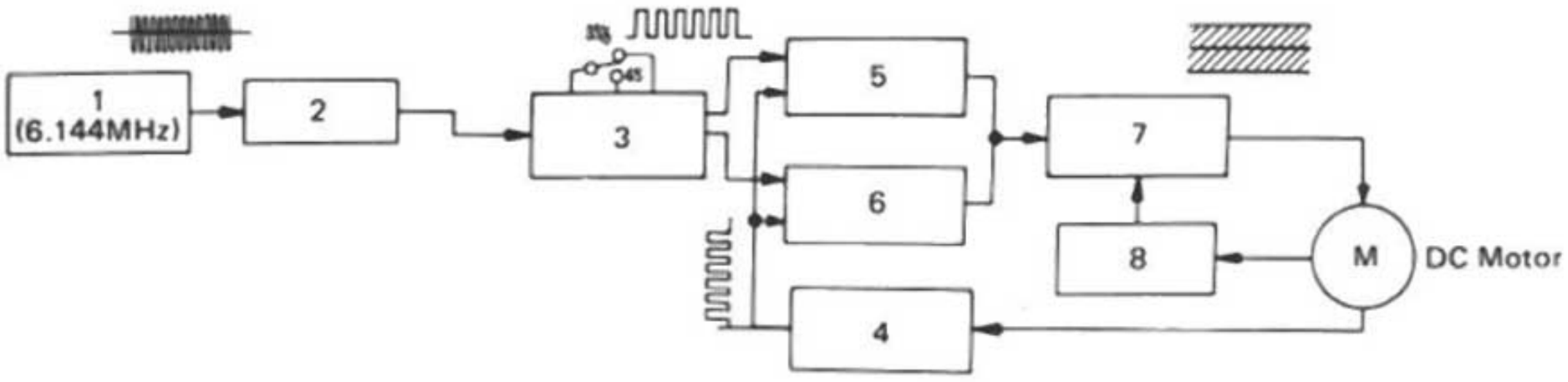
4. MAGNETIC PULSE SENSING FREQUENCY GENERATOR: This produces an alternating current corresponding to the rotation speed of the motor.

5. PHASE COMPARATOR: The phase of the signals from the platter frequency generator is compared with the phase of the reference signal obtained from the speed selection frequency dividing circuit. A corrective voltage corresponding to the difference in phase is produced and this is added to the motor drive current to either accelerate or decelerate the platter by the amount required to maintain the rated speed.

6. FREQUENCY COMPARATOR: The frequency of the signal from the platter frequency generator is compared with the reference frequency derived from the quartz oscillator. The comparator enhances the PLL characteristics to deal with motor overcurrent, etc.

7. BI-DIRECTIONAL DRIVE CIRCUIT: This circuit controls the motor speed in response to the control signals which are applied from the phase comparator and frequency comparator.

8. POSITION DETECTOR: The motor contains Hall elements. As the rotor turns, they emit sequential signal voltages. Transistor switching in the bi-directional drive circuit is controlled by these voltages.



TROUBLE? CHECK IT OUT

Sometimes an operational fault can be mistaken for an equipment malfunction. Before bringing your turntable in for service, check the points described below. Then, if the problem has not been resolved, contact your nearest Pioneer dealer.

• Platter does not rotate.	• Power source is unplugged. → Plug firmly into AC outlet. (If the cord is plugged into a switched AC outlet on your stereo amplifier, turn the power switch on.)
• No sound is produced.	• Phono cable is unplugged or improperly connected. → Connect phono plugs firmly to the correct input terminals. (Refer to page 5.) • Headshell is not properly attached. → Firmly tighten locking collar. (Refer to page 4.) • Cartridge lead wires are loose. → Insert pins firmly. (Refer to page 3.) (Make sure amplifier is being properly operated: the function switch is set to PHONO, the tape monitor switch is off, and the volume is sufficient, etc.)
• Musical tempo is off.	• Record speed is not set properly. → Set the SPEED switch to the correct position (33 or 45). (Refer to page 9.) • Quartz LOCK switch is OFF. → Push it on.
• Excessive noise is produced.	• Ground lead is disconnected. → Connect it properly. (Refer to page 5.) • Record surface is dusty or dirty. → Clean with good quality cleaner. • Dust has collected on stylus. → Clean stylus. • Tracking force is too low. → Adjust to the proper tracking force. (Refer to page 6.) (When noise is produced even when the stylus is not in a record groove, the turntable is being affected by the amplifier or some other electrical equipment. Reconsider the location of the turntable and other components.)
• Sound is distorted.	• Stylus is worn. → Replace with new stylus. • Dust has collected on stylus. → Clean stylus. • Tracking force is too low. → Adjust to the proper tracking force. (Refer to page 6.)
• Tonearm does not descend in automatic mode.	• ARM ELEVATION switch is set to UP. → Set to DOWN.
• Tonearm does not move when START/STOP switch is pushed in automatic mode.	• Arm clamp is still fastened. → Unfasten. • AUTO switch is set to OFF. → Set to ON.
• Stylus does not descend to correct position in automatic mode.	• Adjust automatic descent position as described on page 12.

Feedback howl: Phenomenon caused when sound from speakers is conducted back to the cartridge via the air or other conducting structure to be amplified again to an extremely loud level. If this should occur, immediately turn off the stereo amplifier and relocate the turntable on a firm support where it is not subject to vibration.

SPECIFICATIONS

Motor and Turntable

Drive System . . . . . Direct-drive
Motor . . . . . Quartz PLL Hall motor
Turntable Platter. . . . . 330mm diam. aluminum alloy die-cast
Inertial Mass . . . . . 340kg-cm^2 (including platter mat mass)
Speeds . . . . . 33-1/3 and 45rpm
Speed Control Range . . . . . ±6%
Wow and Flutter . . . . . Less than 0.025% (WRMS)
Signal-to-Noise Ratio . . . . . More than 75dB (DIN-B)
(with Pioneer cartridge model PC-600)

Rotational Characteristics

Build-up Time . . . . . Within 90° rotation at 33-1/3 rpm
Speed Deviation . . . . . Less than 0.002%
Speed vs. Load Characteristics . . . Stable up to 200 grams drag load
Speed Drift . . . . . Less than 0.00008%/h at 33-1/3rpm
Less than 0.00003%/degree temp. change at 33-1/3rpm

Tonearm

Type. . . . . Static-balance type, S-shaped pipe arm
Effective Arm Length 237mm
Overhang. 15mm
Usable Cartridge Weight . . . . . 4g (min.) to 12.5g (max.)
(For cartridge weights over 8.5 grams, attach the sub weight)
Arm Height Adjust Range. . . . . ±3mm

Subfunctions

Auto lead-in
Auto-return
Auto cut
Quick repeat
Quick play
Quick stop
Anti-skating force control
Stylus pressure direct-readout counterweight
Arm height adjusting device
Cueing device
Pitch meter
Free stop hinges

PC-600 Specifications

Type . . . . . Moving magnet type
Stylus . . . . . 0.3 x 0.7-mil diamond (PN-600)
Output Voltage . . . . 2.5mV (1kHz, 50mm/s Peak velocity, LAT)
Tracking Force . . . . . 1.2g to 1.8g (proper 1.5g)
Frequency Response . . . . . 10 to 42,000Hz
Recommended Load . . . . . 47kΩ +170pF

Semiconductors

ICs 7
Transistors 17
Diodes 9
Hall Elements 3
LED 10
Photo Transistors 2
CdS 1

Miscellaneous

Power Requirements
PL-630/HGT . . . . . 220V–240V~, 50, 60Hz
PL-630/ST, S/G . . . AC 110–120/220–240V~
(switchable), 50, 60Hz
Power Consumption 22W
Dimensions . . . . . 470(W) x 148(H) x 418(D) mm
18-1/2(W) x 5-13/16(H) x 16-7/16(D) in.
Weight 12kg/26lb 7oz

Accessories

EP adaptor 1
Overhang gauge 1
Screwdriver 1
Sub weight 1
Cartridge mounting parts (HGT, ST models only)
Cartridge mounting screws 6
Cartridge mounting nuts 2
Cartridge mounting washers 2
Cartridge PC-600 (S/G model only) 1
Operating instructions 1

NOTES:

Specifications and design subject to possible modification without notice, due to improvements.

LINE VOLTAGE SELECTOR SWITCH

(Applicable to S model only.)

You will find the line voltage selector switch on the cabinet's bottom plate (Fig. 23). This switch has positions for 110-120V and 220-240V power sources.

Before your turntable is shipped from the factory, the switch is set to the power requirements of the turntable's destination; nevertheless, you should check that it is set properly before plugging the power cord into the outlet. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows:

1. Disconnect the power cord.
2. Provide yourself with a medium-sized screwdriver. Insert the tip of the screwdriver into the groove of the selector switch and turn it to the voltage indication corresponding to the power voltage of your residence.
   You can tell when it clicks into place.

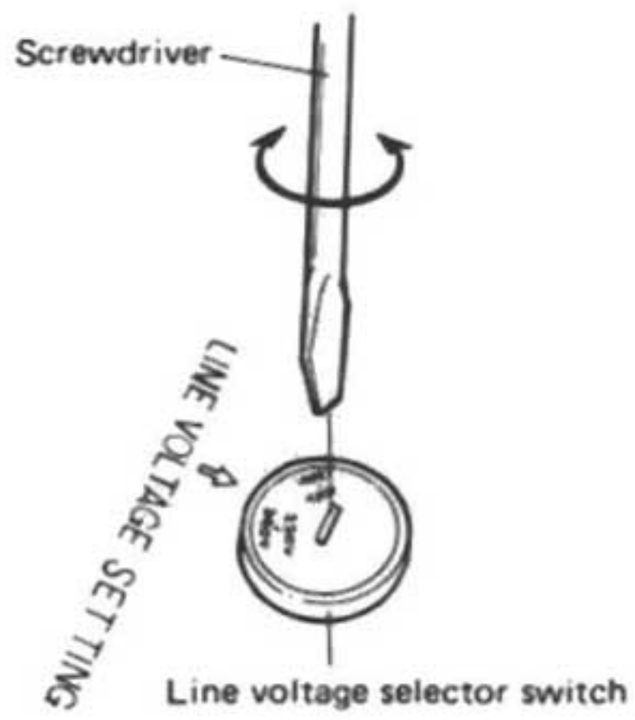


Fig. 23

FOR USE IN UNITED KINGDOM OR AUSTRALIA

Please note:

Models employ 3-conductor mains leads. Please read the following instructions carefully before connecting.

WARNING: THIS APPARATUS MUST BE EARTHED.

CAUTION 240V: MAINS SUPPLY VOLTAGE IS FACTORY ADJUSTED AT 240 VOLTS.

IMPORTANT

The wires in this mains lead are coloured in accordance with following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows. The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured blue or black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured brown or red.

The power cord should be connected last, make sure that the Power switch is OFF.

First insert the female appliance connector of the mains cord into the AC inlet, then plug the cord to the wall socket.

Be sure the appliance connector is fully inserted into the AC inlet.

Unplug the set from the wall socket when it is not to be used for an extended period of time.

FOR YOUR SAFETY

1. *Insert this plug only into effectively earthed three-pin plug-socket outlet.*
2. *If any doubt exists regarding the earthing, consult a qualified electrician.*
3. *Extension cords, if used, must be three-core correctly wired.*

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